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| APPLICATION NO.                                   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/710,395  | 07/07/2004  | Wang-Sheng Chen      | ADTP0113USA         | 4394             |
| 27765   | 7590        | 08/08/2005           | EXAMINER            |                  |
| NORTH AMERICA INTERNATIONAL PATENT OFFICE (NAIPC) |             |                      | TADESSE, YEWEBDAR T |                  |
| P.O. BOX 506                                      |             |                      | ART UNIT            | PAPER NUMBER     |
| MERRIFIELD, VA 22116                              |             |                      | 1734                |                  |

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                     |              |  |
|------------------------------|---------------------|--------------|--|
| <b>Office Action Summary</b> | Application No.     | Applicant(s) |  |
|                              | 10/710,395          | CHEN ET AL.  |  |
|                              | Examiner            | Art Unit     |  |
|                              | Yewebdar T. Tadesse | 1734         |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of group I in the reply filed on 07/15/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 11-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 07/15/2005.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3, lines 4-5 recites the limitation "the temperature sensor". There is insufficient antecedent basis for this limitation in the claim. For the purpose of examination " the at least one temperature sensor" is assumed.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 3-5, 7-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeno et al (US 4,886,012) in view of Yoshio (US 5,778,911).

As to claims 1 and 7-8, Ikeno et al discloses (see Fig 2, column 1, lines 5-7, column 4, lines 50-65) a photoresist coating system comprising a chemical tank (container 11) for positioning at least one photoresist bottle (6), the photoresist bottle being used for storing photoresist solution supplied to the photoresist coating system; a cooling system (refrigerated container and cooling jacket 14) for chilling the photoresist solution in the photoresist bottle; a heating system (heat exchanger 12) for heating the photoresist

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solution; and an automatic photoresist feed system for delivering the photoresist solution to a substrate (nozzle 10 with a control valve 9). Ikeno et al lacks teaching a feed system comprising a draining device for draining the photoresist solution in the photoresist bottle by utilizing the principle of draining. Yoshio discloses (see Fig 2) an automatic photoresist feed system comprising a draining device (circulation cup 12 with a drain pipe 13) for draining the photoresist solution in the photoresist bottle by utilizing the principle of draining and pushing using pumps (15 and 18). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a feed system comprising a draining device for draining the photoresist solution in the photoresist bottle by utilizing the principle of draining in Ikeno to enhance the overall efficiency of the system.

As to claim 3, Ikeno discloses (see Fig 6) at least one temperature sensor for detecting a temperature of the photoresist solution in the photoresist bottle and a control circuit (control unit 26) electrically connected to the temperature sensor (27), the cooling system and the heating system for temperature controlling.

With respect to claims 4-5, in Ikeno the heating system temperature is between 20° – 25° and the cooling system (refrigerated container) is capable of having a temperature between -5°, and -25°.

As to claim 10, Ikeno discloses a waste collecting system (chamber 3 with drain 4) for reclaiming the photoresist solution sprayed during spinning coating.

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8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeno in view of Yoshio as applied to claim 1 above, and further in view of Fukuda et al (US 5,733,375) or Anderson et al (US 5,058,805). Ikeno lacks teaching at least one sensor for detecting an amount of the photoresist solution in the photoresist bottle. However, the use of level sensors for a tank or bottle containing a coating liquid is well known in the art to control the flow of the liquid coating material; for instance - Fukuda et al discloses (see Fig 1) at least one sensor (15) for a coating bottle (tank 3) and Anderson discloses (see Fig 3) sensors (178, 180, 182 and 184) for reservoirs (158 and 152). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include sensors detecting the amount of photoresist solution in the bottle of Ikeno to insure the flow of coating material or to regulate or adjust the flow of coating material based on the detected level of the coating material in the tank or bottle.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeno in view of Yoshio as applied to claim 1 above, and further in view of Ishii et al (US 6,903,030). Ikeno teaches a cooling system having a cooling jacket, however a cooling system comprising a coolant, a water jacket, a water pump, a water pump, a water tank or a thermostat is not taught. Ishii discloses (see Fig 4 and column 7, lines 48-55) a cooling system comprising a coolant, water flowing through the cooling jacket a supply unit 67 and a thermostat (temperature detector 68). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a cooling

system having elements as claimed in Ikeno to maintain the coating material within the container or bottle at the desired cooling temperature.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeno in view of Yoshio as applied to claim 1 above, and further in view of Sakamoto (US 6,193,783). Ikeno lacks teaching a system having a bubble trap tank for collecting bubbles in the photoresist solution. Sakamoto discloses (see column 3, lines 64-66 and Fig 1) a bubble trap tank (16) for a processing solution supply apparatus. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a bubble trap tank in Ikeno to uniformly apply the coating material onto the substrate.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yewebdar T. Tadesse whose telephone number is (571) 272-1238. The examiner can normally be reached on Monday-Friday 8:00 AM-4:30 PM.

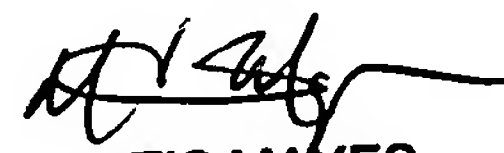
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
YTT

  
CURTIS MAYES  
PRIMARY EXAMINER